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In Memoriam

Marshall Clagett (1916–2005)

Marshall Clagett receives the International Galileo Galilei Prize for Contributions to the History of Science in Italy (Pisa, 6 October, 1996).

When Marshall Clagett died on 21 October 2005, the scholarly world lost not only a distinguished medievalist, but the last member of a triumvirate who had after World War II established the history of science as a recognized discipline within American universities. For, together with Henry Guerlac and I. Bernard Cohen, Clagett during these years indulged in what the historian of medicine Richard Shryock called "spreading the gospel."

Marshall Clagett was born on 23 January 1916 in Washington, DC. He began his university studies in 1933 at the California Institute of Technology, in two years transferring to George Washington University, where, in 1937, he received the A.B. and A.M. degrees. Clagett then entered Columbia University, where his historical interests initially lay in Byzantium, specifically in the 15th-century scholar Georgios Scholarios. But, under the tutelage of Lynn Thorndike, he soon switched to 15th-century Latin science and published in 1941 his doctoral dissertation, *Giovanni Marliani and Late Medieval Physics*.

In the same year that he received his Ph.D., Clagett entered the U.S. Navy, rising from ensign to lieutenant commander, and serving in the Pacific, especially on Okinawa. Following his discharge in 1946, he returned to Columbia as an instructor in the History Department, lecturing and publishing in Columbia's Program in Contemporary Civi-

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lization. Yet, within a year, he joined the Department of the History of Science at the University of Wisconsin, where he remained from 1947 until 1964 and where he also served as director of Wisconsin's Institute for Research in the Humanities from 1959 to 1964. It was at Wisconsin that he did the major share of his "spreading the gospel." This is testified by his editing in 1959 of a volume entitled *Critical Problems in the History of Science* containing papers by leading historians of science both in the United States and abroad, who had convened in Madison at the University in 1957. This "evangelization" is also especially evident in his teaching in the Department, where he taught undergraduate courses covering the whole of the history of science, separate lecture courses on ancient and medieval science, and, of particular note, seminars on medieval Latin science. Members of these seminars frequently went on to produce doctoral dissertations in the field, most of which, unfortunately, remain unpublished.

In 1959 Clagett published his introductory book *Greek Science in Antiquity*, a volume that he viewed "as an introduction to medieval and early modern science—that science being considered as a transformation of Greek science." Indeed, he had already published in 1952, with Ernest Moody, *The Medieval Science of Weights (Scientia de ponderibus)*, which was to form the first volume of the University of Wisconsin's *Publications in Medieval Science* (16 in all), edited by Clagett. The subject of this book with Moody provided some of the results that were incorporated into Clagett's own 1959 *The Science of Mechanics in the Middle Ages*, which has remained to this day the definitive treatment of its topic. It received the History of Science Society's Pfizer Award in 1960. Clagett himself regarded his book at attempting "a documentary analysis of some of the crucial criticism and modification of Aristotelian mechanics that took place from the thirteenth through the fifteenth century. In the course of this analysis both the ancient antecedents and the early modern consequences of medieval mechanics will also be examined briefly," adding that "anyone who is honestly interested in the enormously complex *historical* process of the formation of modern science must examine in detail the terminal concepts of the preceding periods" (p. xix). It must be admitted that Clagett was completely successful in accomplishing these goals.

In 1964 Clagett was appointed a permanent member of the faculty of the School of Historical Studies of the Institute for Advanced Study in Princeton, where he served until his retirement in 1986, thereafter assuming the title of professor emeritus, under which he continued his substantial research. During his years at the Institute Clagett attracted a number of leading scholars in the history of science.

It was there that Clagett continued his investigation of medieval mechanics in his edition, English translation, and analysis of *Nicole Oresme and the Medieval Geometry of Qualities and Motions. A Treatise on the Uniformity and Difformity of Intensities, known as "Tractatus de configurationibus qualitatum et motuum"* (1968). Here Oresme extended immeasurably the medieval doctrine of the intension and remission of forms, representing all sorts of qualities, including velocities, geometrically.

In point of fact, if one gives only a cursory glance to Marshall Clagett's books and numerous articles, it is evident that there is a remarkable preponderance of work on the applications of mathematics in natural philosophy (as is clear in his three previously mentioned books) and on pure mathematics. This concentration on mathematics is already clear from an early, but seminal, article in *Isis* in 1953: "Medieval Latin Translations from the Arabic of the *Elements* of Euclid." Although Clagett initially intended to edit at least part of these translations, this task was left to others (chiefly H.L.L. Busard and Menso Folkerts). Instead, evidence of this emphasis on mathematics in the Middle Ages became the major project in Clagett's scholarly career: the five volumes in 10 tomes of his *Archimedes in the Middle Ages*. Already in the first volume on the Arabo-Latin tradition, the edition and translation of eight versions of Archimedes' *De mensura circuli* gives a very good picture of what the "scholasticization" of mathematics in the Latin Middle Ages really was. As a whole these volumes contain not merely Latin translations of Archimedes' works, but Archimedean works in and beyond the medieval period and into the Renaissance by such figures as Nicholas of Cusa, Jacobus Cremonensis, Regiomontanus, Piero della Francesca, Leonardo da Vinci, Niccolò Tartaglia, Francesco Maurolico, Federigo Commandino, and others. John North, in an essay-review of four of these five volumes, claimed that "the overwhelming importance of Marshall Clagett's compendious works rests on his ability—through a judicious selection of texts or editing and translating—to reduce by a substantial factor the disorder of medieval studies, a disorder inevitable in a subject where sources are scattered, fragmentary, anonymous, unpublished, and quite out of proportion to the number of scholars capable of handling them. Not only are Clagett's texts well selected, well edited, and well translated; they are also provided with invaluable indexes of Latin terms." For these volumes Clagett was awarded the Alexander Koyré Medal of the International Academy of the History of Science in 1981.

The next major project to which Marshall Clagett addressed himself is absolutely remarkable. About 1977 he began the study of Egyptian hieroglyphs and, after the completion of the Archimedes' project in 1984, Clagett turned

to the study of ancient Egyptian science. The results of this study are magnificently evident in the three volumes in four tomes published between 1989 and 1999. Collectively entitled *Ancient Egyptian Science*, the first volume, in two tomes, subtitled "Knowledge and Order," treated of scribal activity and the creation of the world (cosmogony and cosmology); the second, "Calendars, Clocks, and Astronomy"; the third, "Mathematics." In each of these volumes, Clagett continued his usual procedure of providing English translations of the appropriate documents on which his analyses were based, as well as illustrations relating to these texts and indexes of proper names and Egyptian words. Clagett intended to publish a fourth volume on Egyptian medicine and biology, upon which he was working at the time of his death.

One might note that at the conclusion of his efforts dealing with Egyptian science, he had planned to come full circle, as it were, and to give us a critical edition and translation of Richard Swineshead's *Liber calculationum*, a part of which was the subject of an article much earlier in his career: "Richard Swineshead and Late Medieval Physics," *Osiris*, 1950.

In recognition of his scholarly research, in addition to the Pfizer Award and the Koyré Medal already referred to, Clagett was the recipient of the Charles Homer Haskins Medal of the Medieval Academy of America (1969); the Sarton Medal of the History of Science Society (1980); the John Frederick Lewis Prize of the American Philosophical Society (twice), in 1981 for his *Archimedes in the Middle Ages* and in 1989 for the first volume of *Ancient Egyptian Science*; one of two Giovanni Dondi dall'Orologio European Prizes in the History of Science, Technology, and Industry in 1995; and in 1996 the International Galileo Galilei Prize for outstanding contributions by a foreign scholar. He was also awarded honorary degrees from George Washington University (1969) and the University of Wisconsin (1974).

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